



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : B65D 81/38		A1	(11) International Publication Number: WO 00/56631 (43) International Publication Date: 28 September 2000 (28.09.00)
<p>(21) International Application Number: PCT/GB00/00939</p> <p>(22) International Filing Date: 15 March 2000 (15.03.00)</p> <p>(30) Priority Data: 99400667.4 19 March 1999 (19.03.99) EP 9913461.1 10 June 1999 (10.06.99) GB</p> <p>(71) Applicant (for all designated States except MN US): RECKITT & COLMAN FRANCE [FR/FR]; 15, rue Ampère, Boîte postale 83, F-91301 Massy Cedex (FR).</p> <p>(71) Applicant (for MN only): RECKITT & COLMAN PRODUCTS LIMITED [GB/GB]; One Burlington Lane, London. W4 2RW (GB).</p> <p>(72) Inventors; and</p> <p>(75) Inventors/Applicants (for US only): GUILLAUME, Bruno [FR/FR]; 3, impasse de la Chesnaye, Crachés, F-78660 Prunay en Yvelines (FR). LABLAINE, Bruno [FR/FR]; 5, rue du Château d'eau, F-28300 Cintray (FR). RUELLO, Serge [FR/FR]; 31, rue Jean Jaures, F-28600 Luisant (FR).</p> <p>(74) Agents: JOHNSTONE, Helen, Margaret et al.; Reckitt Benckiser plc, Group Patents Department, Dansom Lane, Hull HU8 7DS (GB).</p>		<p>(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report.</p>	
<p>(54) Title: CONTAINER FOR DISPENSING A HEATED FLUID</p> <p>(57) Abstract</p> <p>A container adapted to heat and dispense material comprises a container (1) which defines a first compartment (3) adapted, in use, to be filled with the material requiring heating, such as epilatory wax, and a second compartment (9) adjacent to the first compartment and separated therefrom by a dividing wall (8). The container (1) has an inlet to the second compartment (9) in the outer wall thereof which is closeable by a plug or stopper (10). In use, the second compartment (9) is filled with a heated liquid, such as warm water, to heat the material in the first compartment (3), so that it can be applied to a site through an applicator (12).</p>			

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CONTAINER FOR DISPENSING A HEATED FLUID

The present invention relates to a container and,
more particularly, to a container provided with
5 integral means for facilitating warming of material
inside it, prior to dispensing thereof.

It is known to provide epilatory wax in a bottle or
10 container fitted with an applicator to allow direct
application of the wax to the skin. However, the wax
must be warmed before it can achieve sufficient
viscosity to pass through the applicator and be spread
on. One way of warming the wax is to stand the
15 container in hot water. Another is to place the
container in a microwave oven. Neither technique is
entirely satisfactory.

Standing the container in hot water is relatively
safe. The wax, which can burn at a temperature of
20 above 57°C, is unlikely to be overheated provided that
the water is not too hot. However, the container
becomes wet which is messy and can make it difficult to
handle. Moreover, a vessel to hold the hot water may
not always be readily to hand.

25 Heating the wax in a microwave oven is not very
satisfactory from a safety point of view. Great care
must be taken to ensure that the wax is not overheated.
This is not always easy as microwave ovens have a
30 tendency to cause localised hot spots in the material
being heated. Furthermore, the power output and
efficiency of microwave ovens can vary significantly
from one to another. It will be readily understood

that it is undesirable to allow the possibility of overheating in any material which is to be applied directly to the skin.

5 It is an object of the present invention to provide a container provided with integral means for facilitating warming of its contents, thereby obviating or at least mitigating the problems described hereinabove.

10 According to the present invention, there is provided a container for heating material within it and for dispensing said material once heated, the container comprising:

15 (a) a first compartment for location of the material; and

20 (b) a second compartment for receiving a hot liquid, the second compartment being isolated from the first compartment such that liquid in the second compartment and material in the first compartment cannot mix, the second compartment being in thermal communication with the first compartment;

25 wherein the second compartment has an opening in the form of an inlet for the introduction of the hot liquid, the inlet having a removable closure; and

30 wherein the first compartment has an opening in the form of a restricted outlet adapted for prolonged dispensing of heated material, the outlet having a removable closure.

5 The volume of the first compartment is preferably not so great, having regard to the volume of the second compartment, that the material in the first compartment cannot be heated, to the particular extent required. Preferably, the ratio of the volume of the second compartment to the volume of the first compartment is at least 1:2, preferably at least 1:1.

10 The container of the present invention is intended for use with materials which need to be thermally modified by heating before use.

15 Examples of materials which need to be heated prior to use include personal or cosmetic materials such as epilatory waxes or facial masks; cleaning materials such as shoe or furniture waxes; pharmaceutical materials such as creams for the relief of joint pain; and volatile materials, for example containing an 20 insecticide, or a deodorant, fragrance or other air freshener.

25 In one useful embodiment the first compartment may contain, in use, a volatile liquid which is to be evaporated.

30 In another, preferred, embodiment the first compartment may contain, in use, a solid or a viscous liquid (which terms together include pastes, waxy solids, semi-solids and gels) which is to be heated to provide a flowable liquid.

In an especially preferred embodiment the first

compartment may contain, in use, an epilatory wax.

As used in the present specification, the term "wax" refers generally to any material which is used for the removal of hair from the body, and which is initially heated and is then applied to the body in a generally molten state, allowed substantially to solidify and removed from the body with the unwanted hair. Thus, the term includes both true waxes and other materials suitable for epilation, such as compositions based on resins or compositions based on sugars, in particular glucose.

The hot liquid for thermally modifying the material is preferably hot water, for example from a hot tap or kettle. In order to warm the material, hot water is poured into the second compartment. Over a period of time the heat from the hot water transfuses to the material in the first compartment.

According to one aspect of the first embodiment of the present invention, a dividing wall extends between and is connected to the outer walls of the container, thereby dividing the container into two side-by-side or two end-to-end compartments.

According to another aspect of the first embodiment of the present invention, a dividing wall is in the form of a body which extends longitudinally into the container from the outer wall thereof, the interior of the body defining one of the first and second compartments, and the space between the outer surface of the body and the inner surface of the container

forming the other.

Where the said first compartment is formed by the interior of the said body, preferably, the end thereof connected to the outer wall of the container is provided with said opening to the compartment, and the opposite end is closed. Preferably the body is removable from the container. Preferably the act of removing the body from the container opens the opening to the other compartment. Thus, the body, which preferably constitutes the first compartment, may serve as the removable closure of the second compartment.

Conveniently, the container is comprised of a base, four side walls or one cylindrical side wall, and a top, and the said inlet to the body is at the top or the base of the container.

The restricted outlet may be in the form of an applicator adapted to apply a film of heated liquid material to a surface. The applicator may comprise a narrow elongate slot in the top or the base of the container through which the material can be expressed. Conveniently, the removable closure thereof is provided with a narrow elongate tongue on the inside thereof which engages in the slot to seal it. More preferably, the applicator may comprise a roller ball.

The applicator is preferably removable, thereby to permit removal of the first compartment, so that, for example, it can be replaced by a refill.

Alternatively, the material could be removed from

the device by means of a pump spray, trigger spray or automatic valve. An automatic valve, or even a simple opening, would be useful when the material is a material to be vaporized, for example an air freshener or an insecticide.

5 The material used to form the thermal communication between the first and second compartments is suitably a good conductor and is preferably a metal (for example 10 aluminium). Alternatively it could be a plastics material, for example polyethylene. The material used to form the outer wall of the container is preferably a poor conductor and is preferably a ceramic material or a plastics material, for example polypropylene. A 15 layer of thermal insulation may surround or be provided in the outer wall of the container.

Conveniently, heat sensitive means may be provided 20 to indicate when the material in the first compartment has reached a desired temperature. For example a heat sensitive strip may be provided on or within the outer wall of the body defining the first compartment, the strip thereby indicating when the temperature of the material contained therein has reached the desired 25 temperature.

In accordance with a second aspect of the present 30 invention there is provided a container for heating material within it and for dispensing said material once heated, the container comprising:

(a) a first compartment containing the material, the material at ambient temperature being a solid or a

liquid and at an elevated temperature being a liquid or a vapour (in the case of a solid at ambient temperature) or a less viscous liquid or a vapour (in the case of a liquid at ambient temperature);

5

(b) a second compartment for receiving a hot liquid, the second compartment being isolated from the first compartment such that the hot liquid and the material cannot mix, the second compartment being in thermal 10 communication with the first compartment;

wherein the second compartment has an opening in the form of an inlet for the introduction of the hot liquid, the inlet having a removable closure; and

15

wherein the first compartment has an opening in the form of a restricted outlet adapted for prolonged dispensing of the heated material within it, the outlet having a removable closure.

20

In accordance with a third aspect of the present invention there is provided a method of dispensing a heated material from a container as defined herein, containing hot water as the heating liquid in the 25 second compartment.

In accordance with a further aspect of the present invention there is provided a kit comprising a container as defined herein and at least one refill of 30 said material contained within a body which, when in use in the container, comprises the first compartment.

Embodiments of the present invention will now be

described, by way of example, with reference to the accompanying drawings, in which:

5 Figure 1 shows a sectional view of one embodiment of a container according to the present invention;

Figure 2 shows a sectional view of another embodiment of a container according to the present invention;

10 Figure 3 shows a sectional view of yet another embodiment of a container according to the present invention;

15 Figure 4 shows a sectional view of a further embodiment of a container according to the present invention;

Figure 5 shows a sectional view of a further embodiment of a container according to the present invention; and

20 Figure 6 shows a sectional view of a further embodiment of a container according to the present invention.

Referring to Figure 1 of the accompanying drawings there is shown a container comprising an outer wall 1 having an inverted, generally U-shaped cross-section; thus being of generally tubular shape. The circular bottom of the outer wall 1 is closed by a press-fitted closure member 2 to define a compartment 3. The closure member 2 comprises a first generally annular outer section 4 having a first locating member 5 at its edge and a second locating member 6 disposed radially inwardly of the first locating member. Both locating members 5 and 6 are annular and between them

define a groove in which the free edge of the side wall 7 of the outer wall 1 is received and secured. The closure member 2 also comprises an inner generally tubular section 8 which is open at the end adjoining 5 the generally annular outer section 4 and closed at the end remote therefrom. The inner section 8 extends into the compartment 3 and thereby forms of itself a second compartment 9 therein. The compartment 3 of the container is filled with material prior to fitting the 10 closure member 2 to the outer wall 1. In order to accommodate the tubular inner section 8, the compartment 3 is only partially filled with material prior to the introduction of the tubular inner section.

15 The open end of the second compartment 9 is closed by a cap 10. The cap 10 is provided on its inwardly facing surface with annular locating means 11 which engages in the open end of the inner section 8 and forms a press fit therewith. The cap 10 covers the 20 entire area of the bottom of the container and is flat, so that the container may be stood on it, in the orientation shown in Figure 1.

25 A narrow elongate slot 12 is provided in the top of the outer casing 1 through which material contained in the compartment 3 can be expressed. To prevent unwanted expression of the material before or after use the slot 12 is covered by a push on/pull off cap 13. The cap 13 has a tongue 14 which projects from the 30 inner surface thereof to engage in the slot 12 and close the same.

In use, the outer compartment 3 contains a material,

typically epilatory wax, which must be warmed through before use. In the case of epilatory wax it must be warmed through so that it can achieve the required viscosity to be applied to the user's skin.

5

In order to warm the material the cap 10 is removed to open the inlet to the inner compartment 9. The inner compartment 9 is then filled with hot water and the cap 10 replaced. Over a period of time heat from 10 the hot water in the inner compartment 9 transfuses through the wall of the inner section 8 to warm the wax in the outer compartment 3. Once the wax has achieved the required temperature and attained a sufficient viscosity it then can be expressed through the slot 12 15 onto the user's skin.

Referring now to Figure 2 of the accompanying drawings there is shown another container according to the present invention. In its essential respects this 20 embodiment is identical to the embodiment described hereinabove with reference to Figure 1. In this regard, it comprises an outer compartment 3 which is adapted in use to be filled with material, and an inner compartment 9 which is adapted, in use, to be filled 25 with hot water to warm the material in the outer compartment 3.

In the embodiment of Figure 2 the inner compartment 9 is formed by moulding an inwardly extending tubular 30 section 20 into the base 21 of a vessel shaped component 22. The tubular section 20 is open at the end thereof adjoining the base 21 and closed at the end which is remote therefrom. A removable cap 23 is

provided to allow the inner compartment 9 formed by the tubular section 20 to be closed.

5 The upper, open end of the vessel shaped component 22 is closed by a closure member 24. As shown in the drawing, the closure member 24 is provided with an aperture within which is mounted a cylindrical roller 25 to facilitate application of the material contained within the outer compartment 3 to a surface. However, 10 it will be understood that the cylindrical roller 25 can be replaced by a single elongate narrow slot in the manner as described hereinabove with reference to Figure 1, or by a ball roller.

15 It will be understood that in the manufacture of the embodiment of Figure 2 the container is filled with material through the open top end of the vessel shaped component 22 with the closure member 24 removed. Once filled, the closure member 24 is put in place, for 20 example by snap fitting.

Referring now to Figure 3 there is shown yet another container 30 embodying the present invention, consisting of a base 31, side walls 32 and a top 33; 25 the base, side walls and top together defining a generally cuboid-shaped container. The container 30 is divided into two separate compartments 34 and 35 by a dividing wall 36. The dividing wall 36 is connected to and extends between the side walls 32 of the container.

30 An applicator in the form of a cylindrical roller 37, identical to that shown in the embodiment of Figure 2, is mounted in the top 33 of the container 30. The

upper compartment 35 is filled with material prior to fitting the top 33.

5 In use, the base 31 is removed and the lower compartment 34 is filled with hot water. The base is then snap-fitted back onto the side walls of the compartment 34. Alternatively, the base 31 may be provided with a removable stopper (not shown) for the purpose of filling the compartment 34 with hot water.

10 Heat from the hot water transfuses through the dividing wall 36 to warm the material in the compartment 35. Once the material has been warmed sufficiently it can be used.

15 Referring to Figure 4 of the accompanying drawings there is shown an alternative embodiment of the invention comprising a generally cylindrical container 40. The container 40 is provided with a top wall 41 having a circular central opening. The top wall 41 has an outer downwardly depending skirt 42, extending around its periphery, a downwardly depending rib 43 slightly inwardly spaced from the skirt 42, and an inner downwardly depending skirt 44 around the central opening. On the inner cylindrical face of the inner skirt there is an annular rib 46. The upper region of the side wall 48 of the container has, facing outwards, an annular projection 50 and the skirt 42 has, facing inwards, a complementary annular groove 52. Thus, the top wall 41 may be snap-fitted onto the side wall 48 of the container, with the top of the side wall engaged between the skirt 42 and the rib 43, and with the projection 50 and groove 52 interengaged.

A body 54 of generally cylindrical shape is also provided. The body 54 is closed at end 56. For clarity it is shown open at the top 58 but in practice would be closed by a suitable applicator, for example a 5 roller ball. In use, the body 54 will contain a material which is to be heated, for example an epilatory wax. Adjacent the upper rim of the body 54 is an outwardly facing annular groove 60 which is adapted to engage with the inwardly facing annular rib 10 46 formed on the inner skirt.

In use, the container 40 is partly filled with hot water. The body 54 containing the material is then snap-fitted into the container by means of the 15 engagement of the groove 60 of the body 54 and the rib 46 of the inner skirt; the body 54 is then one compartment of the container, and the remaining volume of the container 40 is the other compartment. Using 20 this arrangement it is possible to provide refills of the material contained in body 54 for use with a single container 40. The refills may be provided with a roller ball fitted or may be supplied without one, the roller ball mechanism itself being removable from the previous refill, now empty, to be fitted to the next 25 refill.

Figure 5 shows a container having a lower vessel 63 of somewhat bulbous shape, having a flat bottom 64, and an upper neck 65, ending in a wide mouth 66. On its 30 outer face the neck 65 has an annular rib 68.

Suspended within the vessel is an inner compartment 70, upwardly open, which contains a material to be

dispensed by evaporation. The inner compartment widens in the upward direction from a closed or blind bottom wall, and it terminates in an annular flange 72. The flange 72 is of size such that it rests on the rim 5 forming the mouth 66.

The third part of the container is a press-on closure part 73. The closure part 73 has a central narrow tubular portion 74 whose lower end is close to 10 the surface of the material which is to be evaporated, at the commencement of evaporation. The upper end of the tubular portion 74 is the highest part of the container and the point at which vapour leaves the container. Slightly below that point extends a conical 15 portion 76 of the closure part. At its lower region the closure part 76 is provided with two formations, namely an outer skirt 78 formed on its inner surface with an annular rib 80 which can slide past rib 68 to secure the closure part 73 over the mouth of the lower 20 part of the container; and, inboard of the skirt 78, a shorter skirt 82 aligned with the rim forming the mouth 66 of the vessel, the skirt 82 and rim 66 entrapping between them the flange 72 of the inner compartment.

25 The conical portion 76 is provided with a circular vent 84.

When the container is assembled the aforesaid second 30 compartment is the volume between the vessel and the inner, first compartment.

In use, to start or accelerate the evaporation of the volatile material within the inner compartment 70,

the closure part 73 is first removed. This may be achieved by pressing the closure part in the direction of the arrows A, thereby to splay the skirt 78 and disengage the rib 80 from the rib 68. The closure part 5 may then be lifted out of the vessel. The inner compartment may then be lifted out and hot water, for example from a hot tap or kettle, may be poured into the vessel, up to a marked level which is near but not in the neck 65. The inner compartment 70 is then 10 replaced and the closure part pressed on. Evaporation of the volatile material is accelerated as it becomes warm and it will leave the container as a vapour mainly through the tubular part 74.

15 Once the volatile material has been exhausted by evaporation the inner container may be replaced by a refill.

20 The volatile material may, for example, be an air freshener and/or an insecticide.

25 Closure members, for example simple stoppers, may be provided to block the tubular member and the vent 84, should it be wished to interrupt emission of the volatile material.

30 In another embodiment, not shown in the drawings, a device of the type shown in Figure 5 is employed, but the tubular member and the vent each have a valve. The valve in the tubular member may be a one-way valve openable in the outflow direction and the vent may have a one-way valve openable in the inflow direction.

Figure 6 shows a re-fillable container adapted to dispense a polish, for example a shoe polish or a furniture polish. Like the embodiment of Figure 5, the container comprises a main vessel 86 having a base 88 on which the container may be stood, and, at its upper end, a neck 90, having an outwardly-facing annular rib 92. The second part is the inner compartment 93, having a generally tubular wall portion 94, a blind bottom wall 95 and an applicator head 96 at its top end. The upper end of the tubular portion terminates in an outward annular flange 98. The third part is a securement cap 100 having an inner annular wall 102 aligned with the neck 90 and adapted to entrap, with the neck 90, the flange 98; and an outer skirt 104, extending considerably below the skirt 102, and having an inwardly-directed rib 106 adapted to engage with the rib 92.

In this embodiment the material in the inner container is, at ambient temperature, a waxy or pasty solid, and at a somewhat raised temperature becomes a flowable liquid. The applicator head 96 comprises an open-cell foam 106.

The device of Figure 6 is used in the manner of the device of Figure 5. The securement cap 100 is removed by squeezing in the direction of the arrows A. The inner compartment 92 is removed and hot water is poured into the outer vessel 86, up to a mark. The inner container is replaced and the cap put onto secure it in place. The arrangement is such that the water does not leak from the container even when the container is inverted, for application of the polish.

In other embodiments a brush could be used, instead of the sponge 106.

5 It will be readily apparent that a container of the present invention allows a material contained therein to be warmed through very easily. One compartment thereof can be filled with hot water, for example from a tap in the user's kitchen or bathroom, creating
10 little or no mess. Significantly, there is little or no risk to the user of the material becoming too hot for safe use as is the case with materials heated in a microwave oven.

CLAIMS

1. A container for heating material within it and for dispensing said material once heated, the container comprising:

5 (a) a first compartment for location of the material; and

10 (b) a second compartment for receiving a hot liquid, the second compartment being isolated from the first compartment such that liquid in the second compartment and material in the first compartment cannot mix, the second compartment being in thermal communication with 15 the first compartment;

wherein the second compartment has an opening in the form of an inlet for the introduction of the hot liquid, the inlet having a removable closure; and

20 wherein the first compartment has an opening in the form of a restricted outlet adapted for prolonged dispensing of heated material, the outlet having a removable closure.

25 2. A container as claimed in claim 1 wherein the first and second compartments are separated by a dividing wall.

30 3. A container according to claim 2, wherein the dividing wall extends between and is connected to the outer wall of the container, thereby dividing the container into two side-by-side or two end-to-end

compartments.

4. A container according to claim 2, wherein the dividing wall is in the form of a body which extends 5 longitudinally into the container from the outer wall thereof, the interior of the body defining one of the first and second compartments, and the space between the outer surface of the body and the inner surface of the container defining the other.

10

5. A container according to claim 4, wherein the body constitutes the first compartment and has its opening at the outer wall of the container and has a closed end opposite to the opening, and wherein the body is 15 removable and serves as the removable closure of the second compartment.

6. A container as claimed in claim 5, wherein the restricted outlet of the first compartment is in the 20 form of an applicator for heated liquid material therein, the applicator being adapted to apply a film of the material to a surface.

7. A container as claimed in any claim 6, wherein the applicator is removable, thereby to permit removal of 25 the first compartment.

8. A container according to claim 6 or 7, wherein the applicator comprises a narrow elongate slot through 30 which the liquid material can be expressed.

9. A container according to claim 6 or 7, wherein the applicator comprises a roller or roller ball.

10. A container according to any preceding claim, wherein a layer of thermal insulation surrounds or is provided at the outer wall of the container.

5

11. A container according to any preceding claim, comprising heat indication means to indicate when the temperature of the material in the first compartment has reached a desired temperature.

10

12. A container for heating material within it and for dispensing said material once heated, the container comprising:

15

(a) a first compartment containing the material, the material at ambient temperature being a solid or a liquid and at an elevated temperature being a liquid or a vapour (in the case of a solid at ambient temperature) or a less viscous liquid or a vapour (in the case of a liquid at ambient temperature);

20

(b) a second compartment for receiving a hot liquid, the second compartment being isolated from the first compartment such that the hot liquid and the material cannot mix, the second compartment being in thermal communication with the first compartment;

25

wherein the second compartment has an opening in the form of an inlet for the introduction of the hot liquid, the inlet having a removable closure; and

30

wherein the first compartment has an opening in the form of a restricted outlet adapted for prolonged

dispensing of the heated material within it, the outlet having a removable closure.

13. A container according to claim 12 wherein the
5 material in the first compartment is epilatory wax.

14. A method of dispensing heated material from a container as claimed in claim 12 or 13, comprising introducing hot water into the second compartment and
10 closing the inlet thereof using the closure; and permitting or causing the heated material within the first compartment to be dispensed through the restricted outlet.

15 15. A container substantially as herein described with reference to and as illustrated in any one of the figures of the accompanying drawings.

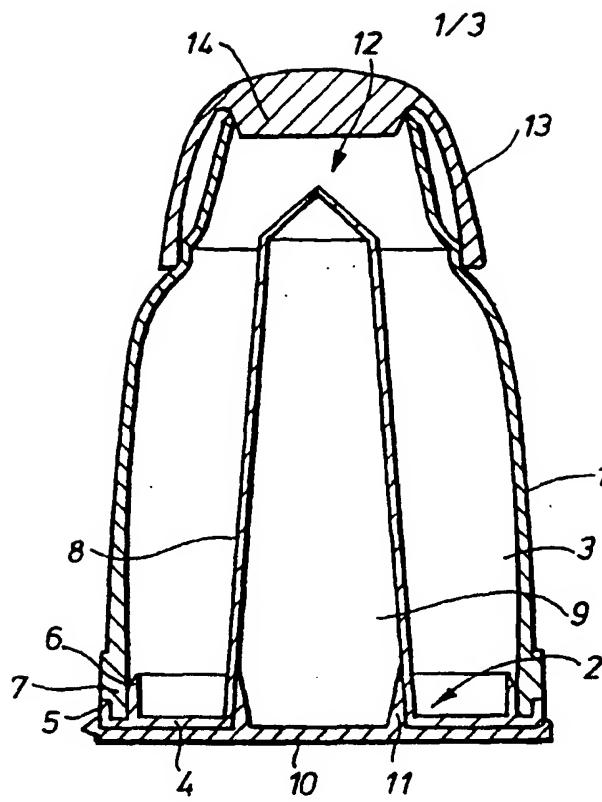


Fig.1.

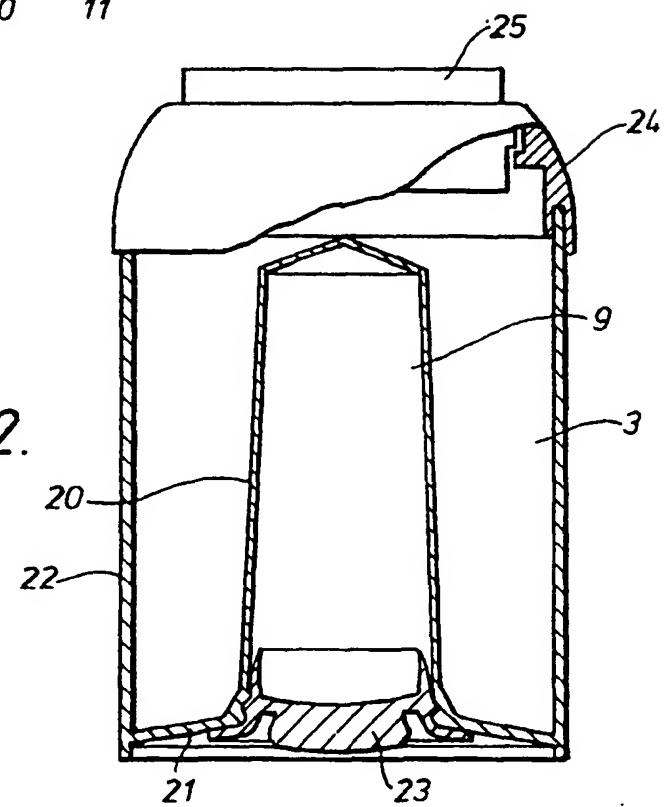


Fig.2.

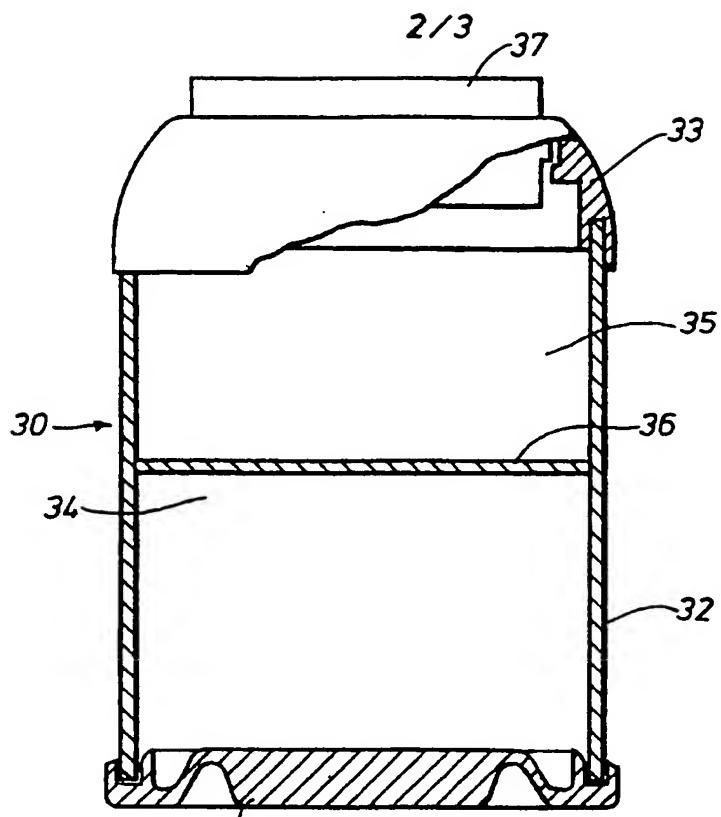


Fig. 3.

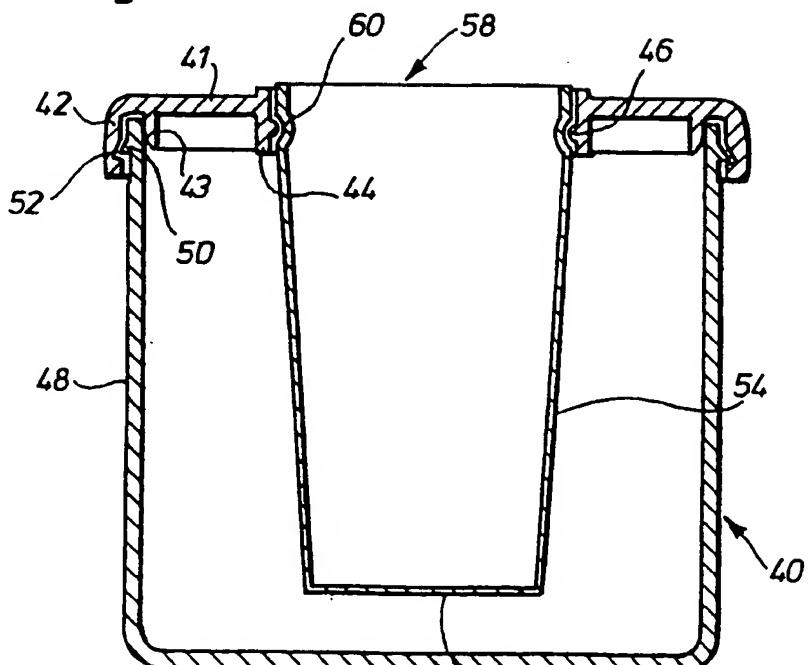


Fig. 4.

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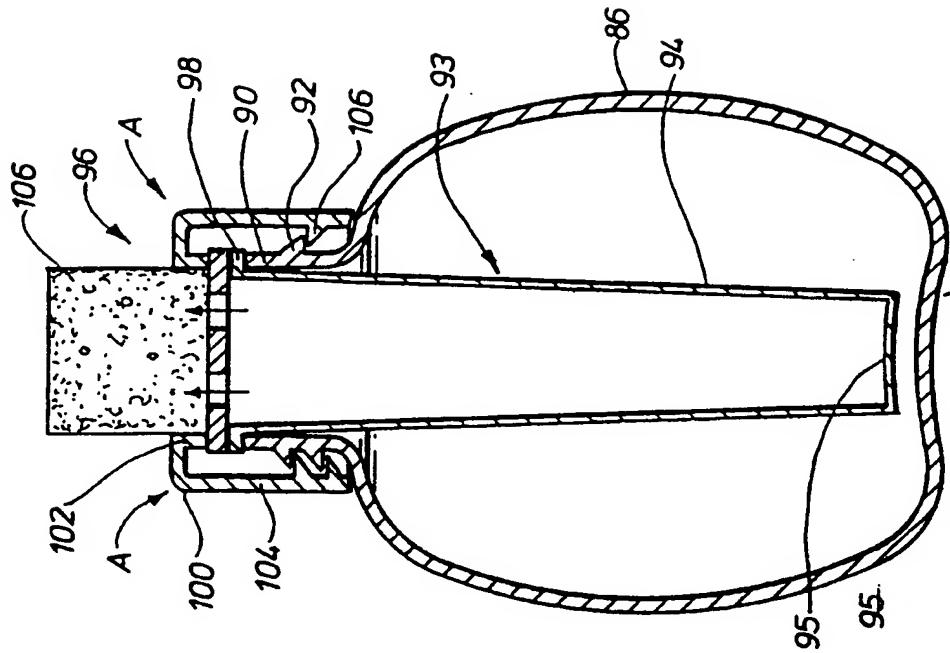


Fig.6.

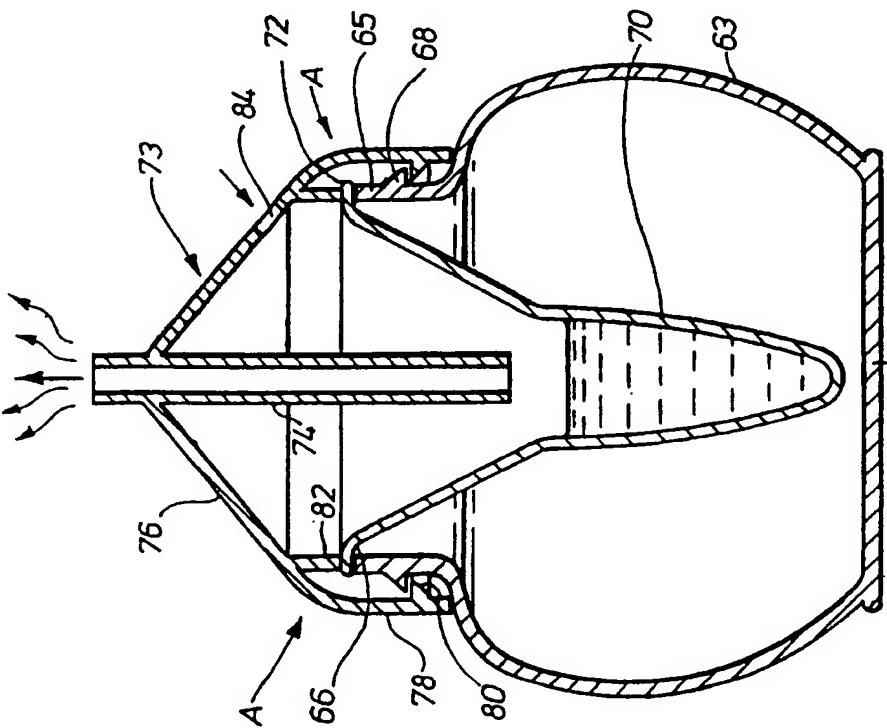


Fig.5.

INTERNATIONAL SEARCH REPORT

International Application No	
PCT/GB 00/00939	

A. CLASSIFICATION & SUBJECT MATTER	
IPC 7 B65D81/38	

According to International Patent Classification (IPC) or to both national classification and IPC	
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B. FIELDS SEARCHED	
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Minimum documentation searched (classification system followed by classification symbols)	
IPC 7 B65D A45D	

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched	
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Electronic data base consulted during the international search (name of data base and, where practical, search terms used)	
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C. DOCUMENTS CONSIDERED TO BE RELEVANT	
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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 315 811 A (BIESECKER LISSA B ET AL) 31 May 1994 (1994-05-31) column 1, line 65 -column 2, line 24; figures 4-6	1,2,4,5
Y	-----	10,11
X	GB 2 286 811 A (THOMAS GARY WAYNE) 30 August 1995 (1995-08-30) abstract; figure 1 page 3, line 10 - line 12	1-4
X	EP 0 560 594 A (BURLEIGH HOWARD IAN) 15 September 1993 (1993-09-15) abstract; figure 1	1-3
Y	EP 0 561 466 A (GALLEGOS IBEAS ISMAEL) 22 September 1993 (1993-09-22) abstract; figure 1	10
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<input checked="" type="checkbox"/>	Further documents are listed in the continuation of box C.
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<input checked="" type="checkbox"/>	Patent family members are listed in annex.
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* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
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X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search	Date of mailing of the international search report
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20 June 2000	03.07.00
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Name and mailing address of the ISA	Authorized officer
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European Patent Office, P.O. 5818 Patenttaan
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
Fax: (+31-70) 340-3018

Mr Luca del Monte

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB 00/00939

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 813 828 A (MAGIC DREAMS COSMETICA INFANTI) 29 December 1997 (1997-12-29) abstract; figure 1 —	11
A	FR 2 764 490 A (SEB SA) 18 December 1998 (1998-12-18) abstract; figure 1 —	6-8, 13-15
A	EP 0 368 698 A (GARETS CHRISTIAN DES) 16 May 1990 (1990-05-16) abstract; figure 1 —	9
A	PATENT ABSTRACTS OF JAPAN vol. 008, no. 118 (C-226), 31 May 1984 (1984-05-31) & JP 59 029611 A (ISEHAN:KK), 16 February 1984 (1984-02-16) abstract —	12

INTERNATIONAL SEARCH REPORT

In...national application No.
PCT/GB 00/00939

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: 15 because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

The claim is not searchable because not being compliant with rule 6.2a PCT

3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/GB 00/00939

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 15

The claim is not searchable because not being compliant with rule 6.2a
PCT

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

Internat'l Application No

PCT/GB 00/00939

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US 5315811	A 31-05-1994	GB 2274443	A, B	27-07-1994
		SG 65592	A	22-06-1999
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GB 2286811	A 30-08-1995	NONE		
EP 0560594	A 15-09-1993	US 5499738	A	19-03-1996
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JP 59029611	A 16-02-1984	NONE		

CONTAINER FOR DISPENSING A HEATED FLUIDBackground of the Invention

The present invention relates to a container and, more particularly, to a container provided with 5 integral means for facilitating warming of material inside it, prior to dispensing thereof.

It is known to provide epilatory wax in a bottle or container fitted with an applicator to allow direct 10 application of the wax to the skin. However, the wax must be warmed before it can achieve sufficient viscosity to pass through the applicator and be spread on. One way of warming the wax is to stand the container in hot water. Another is to place the 15 container in a microwave oven. Neither technique is entirely satisfactory.

Standing the container in hot water is relatively 20 safe. The wax, which can burn at a temperature of above 57°C, is unlikely to be overheated provided that the water is not too hot. However, the container becomes wet which is messy and can make it difficult to handle. Moreover, a vessel to hold the hot water may 25 not always be readily to hand.

Heating the wax in a microwave oven is not very 30 satisfactory from a safety point of view. Great care must be taken to ensure that the wax is not overheated. This is not always easy as microwave ovens have a tendency to cause localised hot spots in the material being heated. Furthermore, the power output and efficiency of microwave ovens can vary significantly from one to another. It will be readily understood

that it is undesirable to allow the possibility of overheating in any material which is to be applied directly to the skin.

5 It is an object of the present invention to provide a container provided with integral means for facilitating warming of its contents, thereby obviating or at least mitigating the problems described hereinabove.

10 Summary of the Invention

According to the present invention, there is provided a container for heating material within it and for dispensing said material once heated, the container comprising:

15

(a) a first compartment for location of the material; and

20

(b) a second compartment for receiving a hot liquid, the second compartment being isolated from the first compartment such that liquid in the second compartment and material in the first compartment cannot mix, the second compartment being in thermal communication with the first compartment;

25

wherein the second compartment has an opening in the form of an inlet for the introduction of the hot liquid, the inlet having a removable closure; and

30

wherein the first compartment has an opening in the form of a restricted outlet adapted for prolonged dispensing of heated material, the outlet having a removable closure.

*Insert from
page 8* →

The volume of the first compartment is preferably not so great, having regard to the volume of the second compartment, that the material in the first compartment 5 cannot be heated to the particular extent required. Preferably, the ratio of the volume of the second compartment to the volume of the first compartment is at least 1:2, preferably at least 1:1.

10 The container of the present invention is intended for use with materials which need to be thermally modified by heating before use.

15 Examples of materials which need to be heated prior to use include personal or cosmetic materials such as epilatory waxes or facial masks; cleaning materials such as shoe or furniture waxes; pharmaceutical materials such as creams for the relief of joint pain; and volatile materials, for example containing an 20 insecticide, or a deodorant, fragrance or other air freshener.

25 In one useful embodiment the first compartment may contain, in use, a volatile liquid which is to be evaporated.

30 In another, preferred, embodiment the first compartment may contain, in use, a solid or a viscous liquid (which terms together include pastes, waxy solids, semi-solids and gels) which is to be heated to provide a flowable liquid.

In an especially preferred embodiment the first

compartment may contain, in use, an epilatory wax.

As used in the present specification, the term "wax" refers generally to any material which is used for the removal of hair from the body, and which is initially heated and is then applied to the body in a generally molten state, allowed substantially to solidify and be removed from the body with the unwanted hair. Thus, the term includes both true waxes and other materials suitable for epilation, such as compositions based on resins or compositions based on sugars, in particular glucose.

The hot liquid for thermally modifying the material is preferably hot water, for example from a hot tap or kettle. In order to warm the material, hot water is poured into the second compartment. Over a period of time the heat from the hot water transfuses to the material in the first compartment.

20

According to one aspect of the first embodiment of the present invention, a dividing wall extends between and is connected to the outer walls of the container, thereby dividing the container into two side-by-side or 25 two end-to-end compartments.

30

According to another aspect of the first embodiment of the present invention, a dividing wall is in the form of a body which extends longitudinally into the container from the outer wall thereof, the interior of the body defining one of the first and second compartments, and the space between the outer surface of the body and the inner surface of the container

forming the other.

Where the said first compartment is formed by the interior of the said body, preferably, the end thereof connected to the outer wall of the container is provided with said opening to the compartment, and the opposite end is closed. Preferably the body is removable from the container. Preferably the act of removing the body from the container opens the opening to the other compartment. Thus, the body, which preferably constitutes the first compartment, may serve as the removable closure of the second compartment.

Conveniently, the container is comprised of a base, four side walls or one cylindrical side wall, and a top, and the said inlet to the body is at the top or the base of the container.

The restricted outlet may be in the form of an applicator adapted to apply a film of heated liquid material to a surface. The applicator may comprise a narrow elongate slot in the top or the base of the container through which the material can be expressed. Conveniently, the removable closure thereof is provided with a narrow elongate tongue on the inside thereof which engages in the slot to seal it. More preferably, the applicator may comprise a roller ball.

The applicator is preferably removable, thereby to permit removal of the first compartment, so that, for example, it can be replaced by a refill.

Alternatively, the material could be removed from

the device by means of a pump spray, trigger spray or automatic valve. An automatic valve, or even a simple opening, would be useful when the material is a material to be vaporized, for example an air freshener or an insecticide.

5

The material used to form the thermal communication between the first and second compartments is suitably a good conductor and is preferably a metal (for example aluminium). Alternatively it could be a plastics material, for example polyethylene. The material used to form the outer wall of the container is preferably a poor conductor and is preferably a ceramic material or a plastics material, for example polypropylene. A layer of thermal insulation may surround or be provided in the outer wall of the container.

10

Conveniently, heat sensitive means may be provided to indicate when the material in the first compartment has reached a desired temperature. For example a heat sensitive strip may be provided on or within the outer wall of the body defining the first compartment, the strip thereby indicating when the temperature of the material contained therein has reached the desired 15 temperature.

15

In accordance with a second aspect of the present invention there is provided a container for heating material within it and for dispensing said material once heated, the container comprising:

20

(a) a first compartment containing the material, the material at ambient temperature being a solid or a

25

liquid and at an elevated temperature being a liquid or a vapour (in the case of a solid at ambient temperature) or a less viscous liquid or a vapour (in the case of a liquid at ambient temperature);

5

(b) a second compartment for receiving a hot liquid, the second compartment being isolated from the first compartment such that the hot liquid and the material cannot mix, the second compartment being in thermal communication with the first compartment;

10

wherein the second compartment has an opening in the form of an inlet for the introduction of the hot liquid, the inlet having a removable closure; and

15

wherein the first compartment has an opening in the form of a restricted outlet adapted for prolonged dispensing of the heated material within it, the outlet having a removable closure.

20

In accordance with a third aspect of the present invention there is provided a method of dispensing a heated material from a container as defined herein, containing hot water as the heating liquid in the second compartment.

25

In accordance with a further aspect of the present invention there is provided a kit comprising a container as defined herein and at least one refill of said material contained within a body which, when in use in the container, comprises the first compartment.

Embodiments of the present invention will now be

described, by way of example, with reference to the accompanying drawings, in which:

5 Brief Description of the Drawing

Figure 1 shows a sectional view of one embodiment of a container according to the present invention;

Figure 2 shows a sectional view of another embodiment of a container according to the present invention;

Figure 3 shows a sectional view of yet another embodiment of a container according to the present invention;

Figure 4 shows a sectional view of a further embodiment of a container according to the present invention;

Figure 5 shows a sectional view of a further embodiment of a container according to the present invention; and

Figure 6 shows a sectional view of a further embodiment of a container according to the present invention.

Detailed Disclosure

Referring to Figure 1 of the accompanying drawings, there is shown a container comprising an outer wall 1 having an inverted, generally U-shaped cross-section; thus being of generally tubular shape. The circular bottom of the outer wall 1 is closed by a press-fitted closure member 2 to define a compartment 3. The closure member 2 comprises a first generally annular outer section 4 having a first locating member 5 at its edge and a second locating member 6 disposed radially inwardly of the first locating member. Both locating members 5 and 6 are annular and between them

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Page 2

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5 define a groove in which the free edge of the side wall 7 of the outer wall 1 is received and secured. The closure member 2 also comprises an inner generally tubular section 8 which is open at the end adjoining
10 the generally annular outer section 4 and closed at the end remote therefrom. The inner section 8 extends into the compartment 3 and thereby forms of itself a second compartment 9 therein. The compartment 3 of the container is filled with material prior to fitting the closure member 2 to the outer wall 1. In order to accommodate the tubular inner section 8, the compartment 3 is only partially filled with material prior to the introduction of the tubular inner section.

15 The open end of the second compartment 9 is closed by a cap 10. The cap 10 is provided on its inwardly facing surface with annular locating means 11 which engages in the open end of the inner section 8 and forms a press fit therewith. The cap 10 covers the 20 entire area of the bottom of the container and is flat, so that the container may be stood on it, in the orientation shown in Figure 1.

25 A narrow elongate slot 12 is provided in the top of the outer casing 1 through which material contained in the compartment 3 can be expressed. To prevent unwanted expression of the material before or after use, the slot 12 is covered by a push on/pull off cap 13. The cap 13 has a tongue 14 which projects from the 30 inner surface thereof to engage in the slot 12 and close the same.

In use, the outer compartment 3 contains a material,

typically epilatory wax, which must be warmed through before use. In the case of epilatory wax, it must be warmed through so that it can achieve the required viscosity to be applied to the user's skin.

5

In order to warm the material, the cap 10 is removed to open the inlet to the inner compartment 9. The inner compartment 9 is then filled with hot water and the cap 10 replaced. Over a period of time, heat from the hot water in the inner compartment 9 transfuses through the wall of the inner section 8 to warm the wax in the outer compartment 3. Once the wax has achieved the required temperature and attained a sufficient viscosity, it then can be expressed through the slot 12 onto the user's skin.

Referring now to Figure 2 of the accompanying drawings, there is shown another container according to the present invention. In its essential respects this embodiment is identical to the embodiment described hereinabove with reference to Figure 1. In this regard, it comprises an outer compartment 3 which is adapted in use to be filled with material, and an inner compartment 9 which is adapted, in use, to be filled with hot water to warm the material in the outer compartment 3.

In the embodiment of Figure 2, the inner compartment 9 is formed by moulding an inwardly extending tubular section 20 into the base 21 of a vessel-shaped component 22. The tubular section 20 is open at the end thereof adjoining the base 21 and closed at the end which is remote therefrom. A removable cap 23 is

provided to allow the inner compartment 9 formed by the tubular section 20 to be closed.

5 The upper, open end of the vessel-shaped component 22 is closed by a closure member 24. As shown in the drawing, the closure member 24 is provided with an aperture within which is mounted a cylindrical roller 25 to facilitate application of the material contained within the outer compartment 3 to a surface. However, 10 it will be understood that the cylindrical roller 25 can be replaced by a single elongate narrow slot in the manner as described hereinabove with reference to Figure 1, or by a ball roller.

15 It will be understood that, in the manufacture of the embodiment of Figure 2, the container is filled with material through the open top end of the vessel-shaped component 22 with the closure member 24 removed. Once filled, the closure member 24 is put in place, for 20 example by snap fitting.

Referring now to Figure 3, there is shown yet another container 30 embodying the present invention, consisting of a base 31, side walls 32 and a top 33; 25 the base, side walls and top together defining a generally cuboid-shaped container. The container 30 is divided into two separate compartments 34 and 35 by a dividing wall 36. The dividing wall 36 is connected to and extends between the side walls 32 of the container.

30

An applicator in the form of a cylindrical roller 37, identical to that shown in the embodiment of Figure 2, is mounted in the top 33 of the container 30. The

upper compartment 35 is filled with material prior to fitting the top 33.

5 In use, the base 31 is removed and the lower compartment 34 is filled with hot water. The base is then snap-fitted back onto the side walls of the compartment 34. Alternatively, the base 31 may be provided with a removable stopper (not shown) for the purpose of filling the compartment 34 with hot water.

10 Heat from the hot water transfuses through the dividing wall 36 to warm the material in the compartment 35. Once the material has been warmed sufficiently, it can be used.

15 Referring to Figure 4 of the accompanying drawings, there is shown an alternative embodiment of the invention comprising a generally cylindrical container 40. The container 40 is provided with a top wall 41 having a circular central opening. The top wall 41 has 20 an outer downwardly depending skirt 42, extending around its periphery, a downwardly depending rib 43 slightly inwardly spaced from the skirt 42, and an inner downwardly depending skirt 44 around the central opening. On the inner cylindrical face of the inner 25 skirt there is an annular rib 46. The upper region of the side wall 48 of the container has, facing outwards, an annular projection 50 and the skirt 42 has, facing inwards, a complementary annular groove 52. Thus, the top wall 41 may be snap-fitted onto the side wall 48 of 30 the container, with the top of the side wall engaged between the skirt 42 and the rib 43, and with the projection 50 and groove 52 interengaged.

A body 54 of generally cylindrical shape is also provided. The body 54 is closed at end 56. For clarity it is shown open at the top 58 but in practice would be closed by a suitable applicator, for example a 5 roller ball. In use, the body 54 will contain a material which is to be heated, for example an epilatory wax. Adjacent the upper rim of the body 54 is an outwardly facing annular groove 60 which is adapted to engage with the inwardly facing annular rib 10 46 formed on the inner skirt.

In use, the container 40 is partly filled with hot water. The body 54 containing the material is then snap-fitted into the container by means of the 15 engagement of the groove 60 of the body 54 and the rib 46 of the inner skirt; the body 54 is then one compartment of the container, and the remaining volume of the container 40 is the other compartment. Using this arrangement, it is possible to provide refills of 20 the material contained in body 54 for use with a single container 40. The refills may be provided with a roller ball fitted or may be supplied without one, the roller ball mechanism itself being removable from the previous refill, now empty, to be fitted to the next 25 refill.

Figure 5 shows a container having a lower vessel 63 of somewhat bulbous shape, having a flat bottom 64, and an upper neck 65, ending in a wide mouth 66. On its 30 outer face, the neck 65 has an annular rib 68.

Suspended within the vessel is an inner compartment 70, upwardly open, which contains a material to be

dispensed by evaporation. The inner compartment widens in the upward direction from a closed or blind bottom wall, and it terminates in an annular flange 72. The flange 72 is of size such that it rests on the rim forming the mouth 66.

The third part of the container is a press-on closure part 73. The closure part 73 has a central narrow tubular portion 74 whose lower end is close to the surface of the material which is to be evaporated, at the commencement of evaporation. The upper end of the tubular portion 74 is the highest part of the container and the point at which vapour leaves the container. Slightly below that point extends a conical portion 76 of the closure part. At its lower region the closure part 76 is provided with two formations, namely an outer skirt 78 formed on its inner surface with an annular rib 80 which can slide past rib 68 to secure the closure part 73 over the mouth of the lower part of the container; and, inboard of the skirt 78, a shorter skirt 82 aligned with the rim forming the mouth 66 of the vessel, the skirt 82 and rim 66 entrapping between them the flange 72 of the inner compartment.

The conical portion 76 is provided with a circular vent 84.

When the container is assembled the aforesaid second compartment is the volume between the vessel and the inner, first compartment.

In use, to start or accelerate the evaporation of the volatile material within the inner compartment 70,

the closure part 73 is first removed. This may be achieved by pressing the closure part in the direction of the arrows A, thereby to splay the skirt 78 and disengage the rib 80 from the rib 68. The closure part 5 may then be lifted out of the vessel. The inner compartment may then be lifted out and hot water, for example from a hot tap or kettle, may be poured into the vessel, up to a marked level which is near but not in the neck 65. The inner compartment 70 is then 10 replaced and the closure part pressed on. Evaporation of the volatile material is accelerated as it becomes warm and it will leave the container as a vapour mainly through the tubular part 74.

15 Once the volatile material has been exhausted by evaporation the inner container may be replaced by a refill.

20 The volatile material may, for example, be an air freshener and/or an insecticide.

25 Closure members, for example simple stoppers, may be provided to block the tubular member and the vent 84, should it be wished to interrupt emission of the volatile material.

30 In another embodiment, not shown in the drawings, a device of the type shown in Figure 5 is employed, but the tubular member and the vent each have a valve. The valve in the tubular member may be a one-way valve openable in the outflow direction and the vent may have a one-way valve openable in the inflow direction.

Figure 6 shows a re-fillable container adapted to dispense a polish, for example a shoe polish or a furniture polish. Like the embodiment of Figure 5, the container comprises a main vessel 86 having a base 88 on which the container may be stood, and, at its upper end, a neck 90, having an outwardly-facing annular rib 92. The second part is the inner compartment 93, having a generally tubular wall portion 94, a blind bottom wall 95 and an applicator head 96 at its top end. The upper end of the tubular portion terminates in an outward annular flange 98. The third part is a 10 securement cap 100 having an inner annular wall 102 aligned with the neck 90 and adapted to entrap, with the neck 90, the flange 98; and an outer skirt 104, extending considerably below the skirt 102, and having an inwardly-directed rib 106 adapted to engage with the 15 rib 92.

In this embodiment, the material in the inner 20 container is, at ambient temperature, a waxy or pasty solid, and at a somewhat raised temperature becomes a flowable liquid. The applicator head 96 comprises an open-cell foam 106.

The device of Figure 6 is used in the manner of the 25 device of Figure 5. The securement cap 100 is removed by squeezing in the direction of the arrows A. The inner compartment 93 is removed and hot water is poured into the outer vessel 86, up to a mark. The inner 30 container is replaced and the cap put onto secure it in place. The arrangement is such that the water does not leak from the container even when the container is inverted, for application of the polish.

In other embodiments, a brush could be used, instead of the sponge 106.

5 It will be readily apparent that a container of the present invention allows a material contained therein to be warmed through very easily. One compartment thereof can be filled with hot water, for example from a tap in the user's kitchen or bathroom, creating 10 little or no mess. Significantly, there is little or no risk to the user of the material becoming too hot for safe use as is the case with materials heated in a microwave oven.